

PROPRIETARY AND STRICTLY CONFIDENTIAL

Solving Arizona's Water Needs



Executive Summary

- ▶ The State of Arizona suffers from a severe water deficit, while the demand for water is expected to increase in the coming years
- ▶ The Colorado Basin is experiencing a continuous severe drought and has recently recorded its driest years of the last century
- ▶ An exceptional group of companies, each renowned and expert in its field, has teamed up to find and offer a viable, efficient, sustainable and affordable solution
- ▶ Desalination facility, expandable to meet future requirements and powered by renewable energies, to supply the State of Arizona with water from the Sea of Cortez through the shortest route

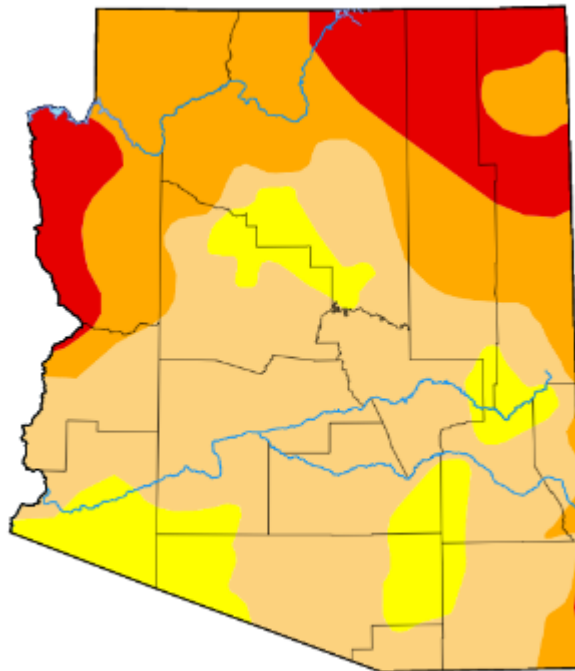


Agenda

- ▶ **The Problem**
- ▶ **The Proposed Solution**
 - ▶ About Seawater Desalination
 - ▶ The Puerto Peñasco Project
 - ▶ The Commercial Agreement



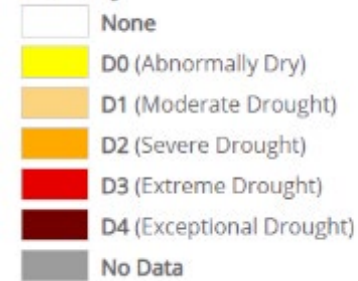
Severe, Prolonged Drought



Map released: Thurs. September 16, 2021

Data valid: September 14, 2021 at 8 a.m. EDT

Intensity



Week	Date	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2021-09-14	0.00	100.00	86.84	40.02	13.69	0.00
Last Week	2021-09-07	0.00	100.00	86.84	40.02	13.69	0.00
3 Months Ago	2021-06-15	0.00	100.00	98.94	94.64	86.52	57.79
Start of Calendar Year	2020-12-29	0.00	100.00	100.00	98.34	93.86	72.69
Start of Water Year	2020-09-29	0.00	100.00	100.00	93.97	69.95	3.37
One Year Ago	2020-09-15	0.00	100.00	100.00	90.67	57.34	0.00

Severe, Prolonged Drought



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PRESS RELEASE FOR IMMEDIATE RELEASE

Arizona heads into Tier 1 Colorado River Shortage for 2022

ADWR and CAP joint statement in response to the U.S. Secretary of the Interior's first-ever declaration of a Colorado River Shortage

Phoenix, Arizona (August 16, 2021) – The Colorado River Basin continues to experience drought and the impacts of hotter and drier conditions. Based on the Jan. 1 projected level of Lake Mead at 1,065.85 feet above sea level, the U.S. Secretary of the Interior has declared the first-ever Tier 1 shortage for Colorado River operations in 2022.

This Tier 1 shortage will result in a substantial cut to Arizona's share of the Colorado River -- about 30% of Central Arizona Project's normal supply; nearly 18% of Arizona's total Colorado River supply; and less than 8% of Arizona's total water use. Nearly all the reductions within Arizona will be borne by Central Arizona Project (CAP) water users. In 2022, reductions will be determined by Arizona's priority system -- the result will be less available Colorado River water for central Arizona agricultural users.

Severe, Prolonged Drought



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- ▶ **The Consortium**
 - ▶ IDE
 - ▶ Pierson Capital Group



What Is Seawater Desalination?

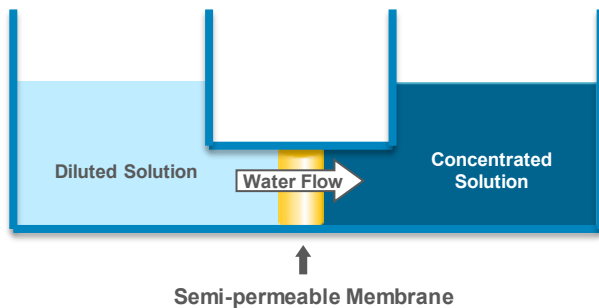
- ▶ Desalination is a secure water source that doesn't depend on precipitation

How does desalination work?

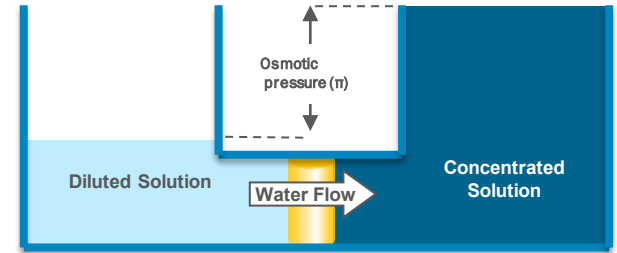
- ▶ Seawater desalination is the removal of salt and impurities from seawater to produce fresh water. Our desalination plants use a reverse osmosis process. Seawater is pumped into the desalination plant from the ocean and passes through pre-treatment filtration to remove most of the large and small particles.
- ▶ The filtered seawater is then forced under pressure through special membranes whereby the osmosis process that normally occurs in nature is reversed. The pores in the membranes are so tiny that salt, bacteria, viruses and other impurities are separated from the seawater. In essence they act like microscopic strainers. About half of the water that enters the plant from the sea becomes fresh drinking water.
- ▶ The desalinated water is then subject to further treatment to meet drinking water standards before it reaches our customers.
- ▶ The salt and other impurities removed from the sea water are then returned to the ocean via diffusers, which ensure it mixes quickly and prevents impacts on the marine environment.



What Is Seawater Desalination? (2)

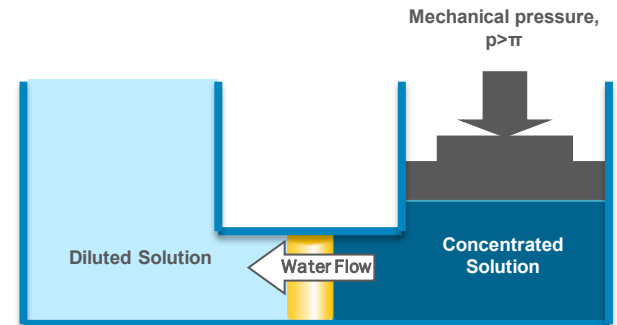


Forward Osmosis
Fluid flows from low to high solute concentrations



Reverse Osmosis (RO)

By applying a pressure in excess of the osmotic pressure, fluid flows from high solute concentration through a semi-permeable membrane to a region of low solute concentration



Example - Aerial View of Hadera Plant, Israel

Intake

Pretreatment

SWRO

BWRO (Cascade)

Post-treatment

Product water tank



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Puerto Peñasco – Arizona project

▶ **Project Scope**

- Intake system near Puerto Peñasco, Mexico
- Desalination facility – initial stage of 300,000 AFY, expandable according to State of Arizona's future needs
- Pipeline – about 200 miles
- Reservoirs
- Water distribution facility

▶ **Product Water** – Potable water, according to relevant regulation

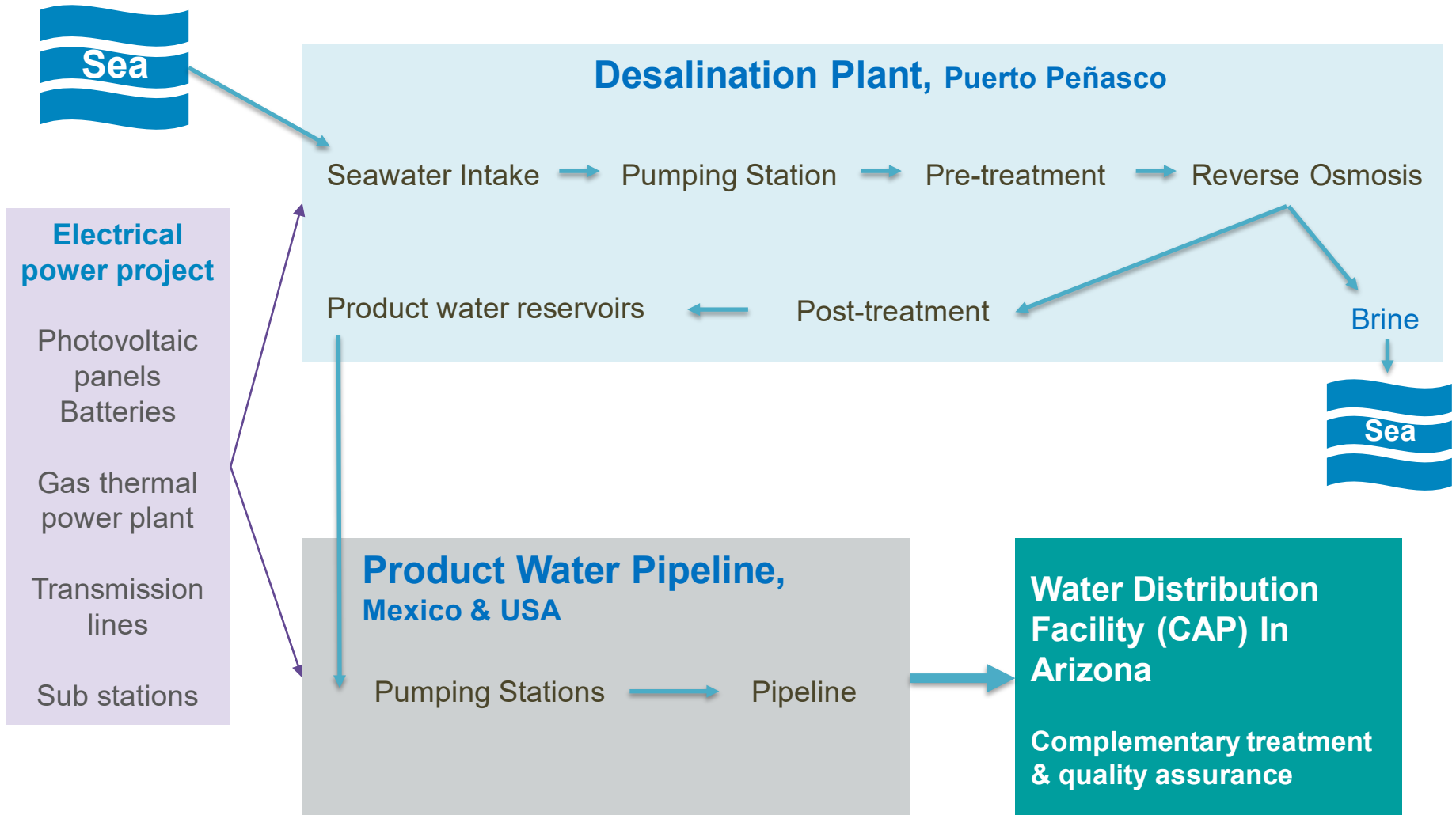
▶ **Site for the Desalination Facility** – Puerto Peñasco, Mexico

▶ **Seawater source** – Sea of Cortez

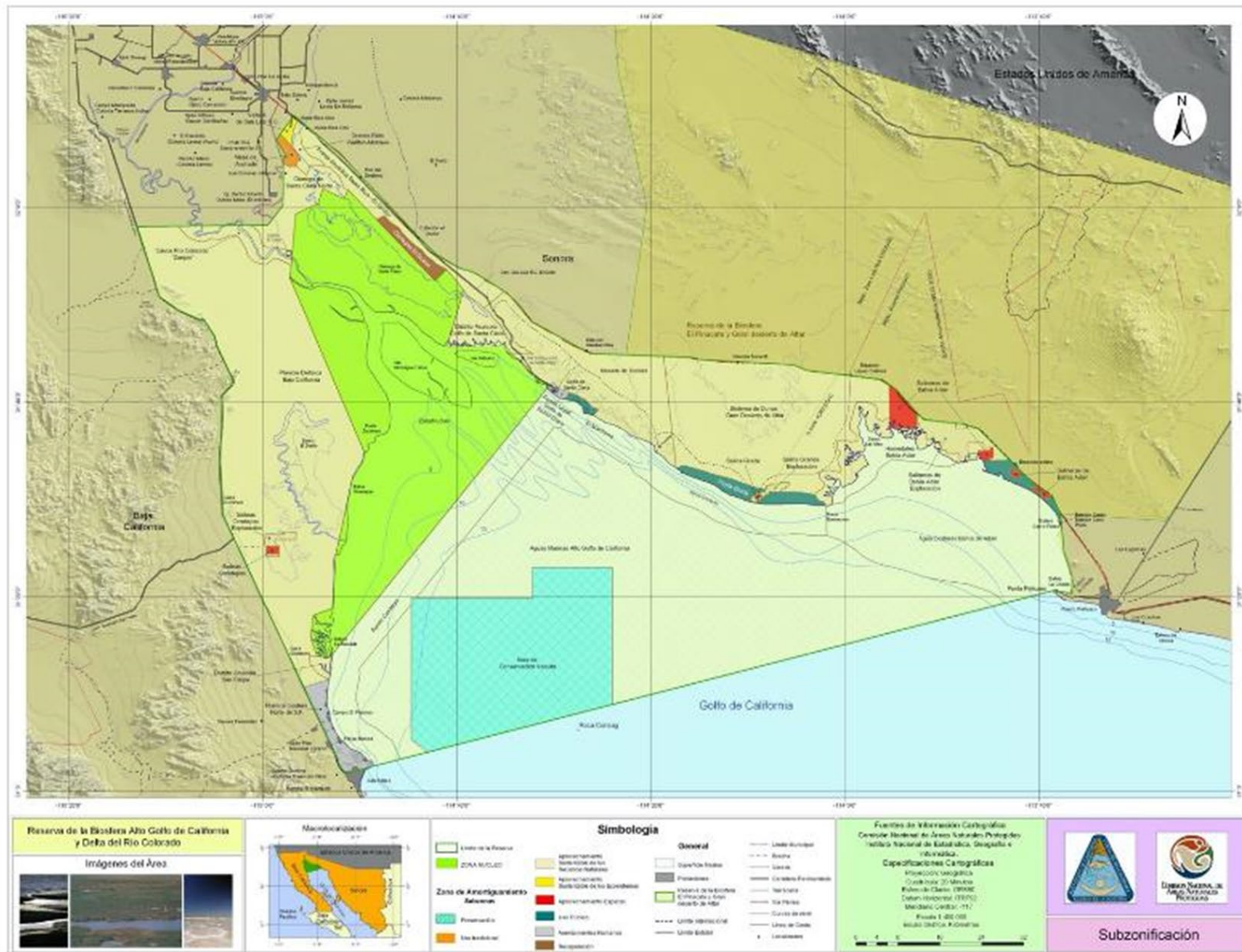
▶ **Pipeline Route** – based on most economic and environmentally friendly route, including right of way, according to relevant regulation

▶ **Delivery Point** – Water distribution facility in Arizona (CAP), for complementary treatment and quality validation

Schematic Chart for Providing Potable Water to Arizona



Map 1. High Sea of Cortez



Map 2. Area



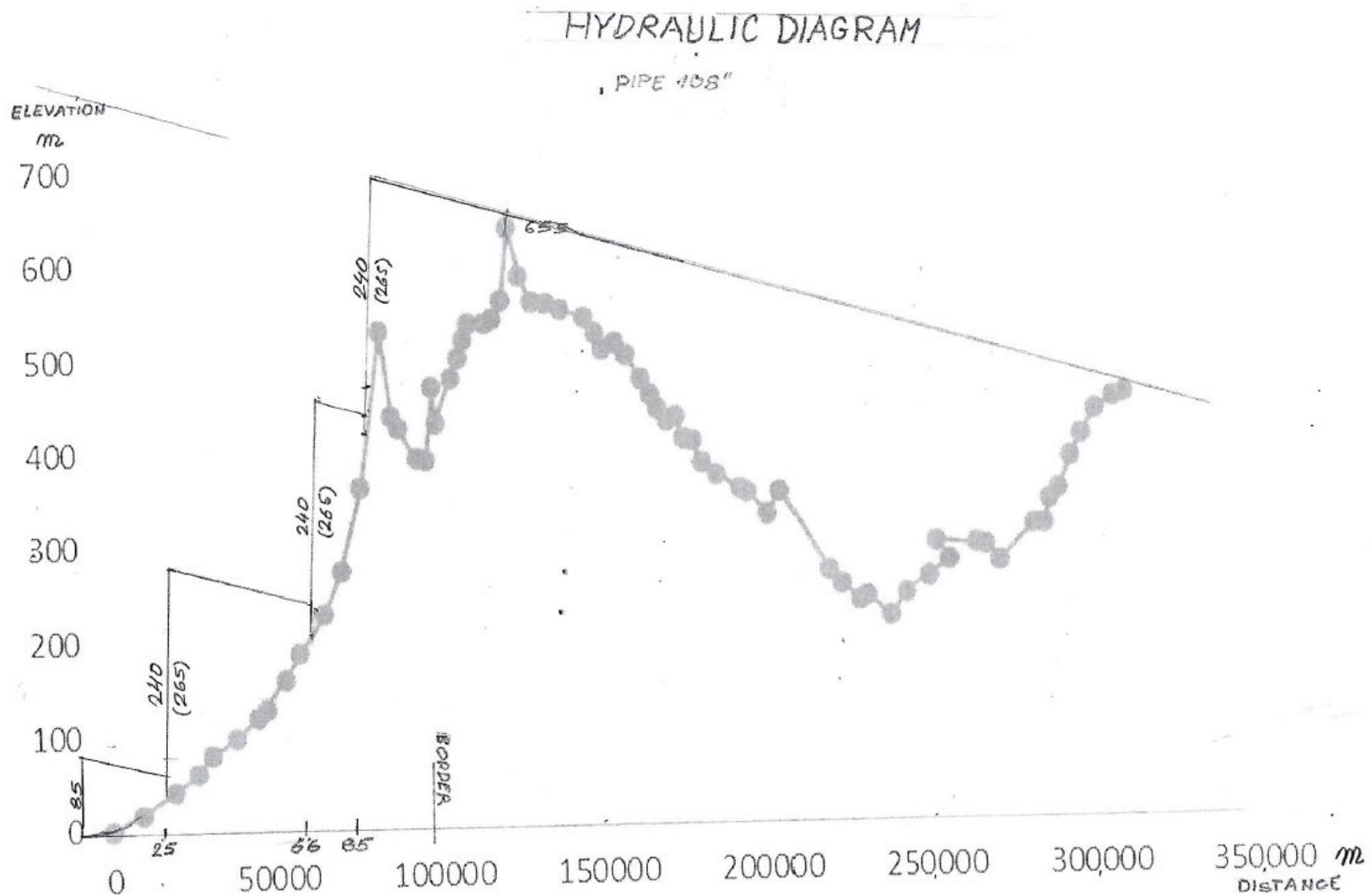
Map 2. Desalination, Distribution and Pipeline Route



Map 3. Distribution Facility (Tie-In Point to CAP)



Topographic profile – Puerto Peñasco-Buckeye-CAP



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Water Purchase Agreement

- ▶ “Performance-based” contracting, linking Off-taker’s payments to contractual performances of the Consortium
- ▶ Consortium shall develop, handle permitting, design, finance, erect, operate and maintain the project, committing to pre-agreed quantities and qualities of water
- ▶ Off-taker’s commits to the ‘Take-or-Pay’ mechanism
- ▶ 30-years long or more

Water Purchase Agreement (2)

The State of Arizona benefits from:

- ▶ **Shifting most of the risks** to the Consortium
- ▶ Access to **fixed, long-term water tariff**
- ▶ **Long-term** performance “**warranty**” and **budget stability**
- ▶ Technological **innovation** and **operational efficiency** - leading to **improved cost, optimized schedule and outcome certainty**
- ▶ Access to **smart sources of capital**

▶ ‘Take-or-Pay’ Mechanism

- ▶ ‘Take or Pay’ guarantees project earns revenue sufficient to cover investment
- ▶ Water price, the basis of “Take-or-Pay” principle, is comprised of ‘Fixed’ and ‘Variable’ components
- ▶ Off-taker is obliged to pay Fixed Price component
 - As long as the desalination plant is available
 - Even if quantities actually consumed are reduced (or even nil)
- ▶ Off-taker pays Variable Price component for quantities actually purchased
- ▶ By implementing this principle, the Consortium will be able to secure the financing to the project, as it is not exposed to demand risks

Turning the Dream into a Reality

- ▶ IDE's story begins in the young state of Israel, almost 60 years ago
- ▶ Turning the desert into a lush land using desalination was the vision that dreamers such as Ben Gurion strove to realize
- ▶ The Israeli desalination story intertwines with the birth of a new nation. It brings together forward thinking, state-of-the-art technology and a determined refusal to surrender to adversity
- ▶ This turned Israel from a semi-arid country with scarce water resources into a flourishing, water-resilient nation, where 70% of potable water originate from desalination



Necessity and Ingenuity are the very foundations IDE Technologies was established on

IDE - Water Treatment is in Our DNA



EXPERIENCE & UNRIVALLED TRACK RECORD

Established in 1965 with global presence across all industries, with more than 450 installed units in over 40 countries



RELIABILITY

Developed and operated the largest desalination plants based on P3 & BOT models



TECHNOLOGY LEADERSHIP

In SWRO, thermal and brackish RO desalination, Industrial Water Treatment and wastewater reuse, with more than 60 granted patents in the field



PARTNERSHIP

Building strong partnerships to ensure 100% risk mitigation and success on all fronts:

- Equity partnership - offering financial stability and flexibility
- Long-term, trusted relations with international lenders



EXPERTISE

In designing, developing, constructing and operating large-scale Water Treatment facilities, including In-house engineering powerhouse capabilities

Tradition of Excellence

IDE Named One of
MIT Technology Review's

**50 Smartest
Companies**

**MIT
Technology
Review**



Over 5 Decades of Global Distribution in +40 Countries



USA

Total Capacity
225,000 m³/day



AUSTRALIA

Total Capacity
150,000 m³/day



ISRAEL

Total Capacity
1,600,000 m³/day



INDIA

Total Capacity
583,000 m³/day



ITALY

Total Capacity
27,000 m³/day



CYPRUS

Total Capacity
125,000 m³/day



SPAIN

Total Capacity
78,000 m³/day



CHINA

Total Capacity
200,000 m³/day

LATIN AMERICA

Total Capacity
142,000 m³/day

CENTRAL ASIA

Total Capacity
260,000 m³/day



Corporate Social Responsibility (CSR)

- ▶ IDE assures acting in a responsible manner in the marketplace, workplace, community and toward the environment
- ▶ IDE assures that interests of all stakeholders (governments, local communities, customers, shareholders and employees) are at the center of our decision making
- ▶ IDE sees safety as a critical issue, above all other considerations
- ▶ IDE constantly seeks ways to provide more environmentally-friendly solutions
- ▶ Ethics and governance drives our social interactions

ISO Certifications

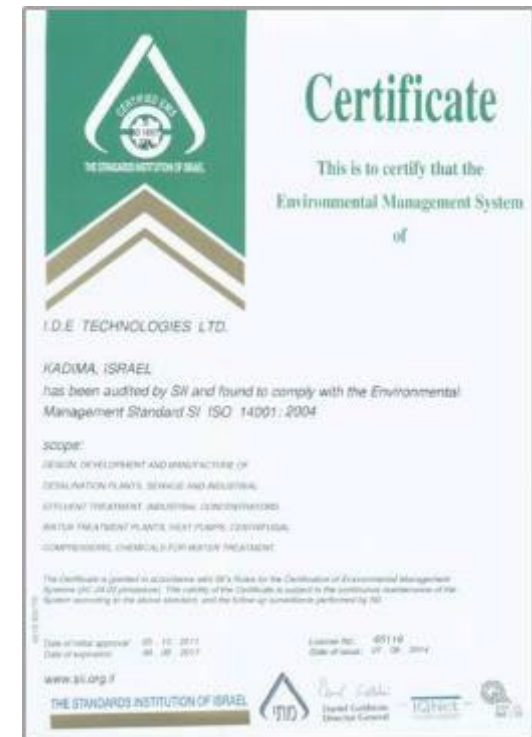
ISO9001:2008 Quality
Management Standards



ISO18001:2007 Occupational Health
And Safety Management
Standards



ISO14001:2004 Environmental
Management Standard



Environmental Aspects

- ▶ Each IDE facility adheres to the strictest environmental standards and regulations
- ▶ IDE uses its strength, know-how and technologies to comply with such environmental issues, for example:
 - Sorek 1 - minimizing marine, shoreline and land impacts by using pipe jacking of long and large diameter pipelines, smart structural design and sludge treatment for reduced energy and chemical consumption
 - Carlsbad Plant - adhering to California's environmental regulation, for example, by using special intake structures with new screens technology to prevent fish and other marine life from entering the pipes and by utilizing state-of-the-art technology and design practices to reduce electrical demand
- ▶ In each plant, IDE rigorously monitors all environmental aspects of its plants, and has developed a specific HSSE plan for each plant

Environmental Aspects

Potential Environmental Impact		Mitigation Measures
Impact	Source of Impact	
Alteration of the natural terrain (land area)	Earth and construction works	Pipe-jacking (tunnelling) for installation of onshore pipelines (seawater feed and brine)
		Measures for soil retention in plant area
Alteration of the seabed	Marine works	Pipe-jacking for installation of offshore pipelines (intake & outfall) to at least 600m from the shoreline; precisely controlled dredging for installation of pipelines from 600m; covering of the pipelines and restoration of the original bathymetry
Sediment resuspension	Marine works	Minimal dredging activities; minimization of drifting and sweeping of dredger suction head by precise positioning control
Marine habitat alteration and changes in sediment transport	Intake & outfall systems (piping)	Intake and outfall pipelines laid below the seabed
Entrainment and impingement of marine biota	Intake system (suction heads)	Intake heads designed for slow suction velocity
Accidental spillage or leakage of hazardous chemicals	Main plant (storage & handling of chemicals)	Safety measures for transportation, storage and handling of chemicals as prescribed in applicable legislation; placement of storage tanks for corrosive chemicals in secondary basins; chemical neutralization of any spill prior to disposal

Thank you!

